# Aerospace Engineer

## Steve Smith

**Aerospace Researcher Engineer, High Speed Aerodynamics Branch**

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I am a research engineer at NASA's Ames Research Center, where I do aerodynamic performance prediction and design of subsonic transports. I have spent about one third of this time doing experimental research in wind tunnels, and about two thirds of the time in computational research, applying computer flow simulations to evaluate new airplane concepts, or develop more refined theories.

### My areas of expertise

- Aerodynamic performance prediction
- Design of subsonic transports
- Experimental research in wind tunnels
- Computer flow simulations

### How I first became interested in this profession

My father is also an aeronautical engineer, so I was exposed to the kinds of things he worked on even when I was very little. I can remember being two or three years old, and my bedtime reading was usually browsing through Aviation Week magazine. My coloring books had pictures of airplanes. I started building and flying model airplanes when I was about 8 years old.

### What helped prepare me for this job

I grew up with a deep love of nature, spending hours watching and drawing birds at the Palo Alto Baylands Nature Center and Foothills Park. I was good in math but I really liked biology too, and through most of middle school and high school, I was pretty set on a career in life sciences. In high school, I had a great teacher for both chemistry and physics, and from these classes I saw how I could turn my fun with airplanes into a fun career. I picked the University of California at Davis for college because it offered aeronautical rather than aerospace engineering, and because it was a great spot for bicycling.

### My education and training

- University of California at Davis
- Masters from Stanford University
- Ph.D. from Stanford University

### My career path

- I came to NASA Ames Research Center straight out of college
- Received my Masters degree
- Returned to NASA Ames Research Center

### What I like about my job

Whatever the goal of the research is, it always breaks down into many smaller tasks, so the variety keeps work from getting boring. Our most important task is publishing the results. It doesn't do anyone any good to spend time and money to do research if the results are not published so everyone can use them. Most engineers and scientists are not trained to be good writers, so publishing is often the hardest part. But it's also the most satisfying part of our work. When a report is finished and distributed, and other researchers and designers learn from your work to make their designs better, that's fantastic.

### What I don't like about my job

Just like any other job, not everything is fun. To do a research project, you must explain to managers why it's important and how it will improve technology. There are other good ideas that deserve funding also, so sometimes there isn't enough money or wind tunnel time to do something. Sometimes managers don't recognize the potential benefits, and often designers would like to keep doing things "the old way" so they don't pay attention to your ideas. And of course, just like Dilbert's job, there are too many meetings.

### My advice to anyone interested in this occupation

Well, most everyone will tell you to study math and science. I think it's important to study writing and history too. The basic product of my work is knowledge. What I learn goes into the big pool of technical understanding about how airplanes work best. Aircraft designers and other researchers learn from my work by reading my publications, so clear writing skills are important.